

IN THE CLAIMS

Please amend claims 1-6, 11, 16, 17, 38-40, 42-44, 54, 58, 61, 66, 69, and 70, cancel claims 12-15, 25-37, 41, 51-53, 55, 59, 62-65, 67, and 73-81, and add claims 82-108 as follows.

1 1.(Currently amended) An apparatus recognizing a size of media, said apparatus
2 comprising:

3 a media aligning guide being mounted on a cassette and being movable to a plurality of
4 different positions to align media loaded in the cassette, the cassette being detachably mounted in
5 a main body;

6 a signal generating unit being interlocked with said media aligning guide, said signal
7 generating unit generating a ~~plurality of signal codes~~ code in response to a current position of said
8 media aligning guide, said signal generating unit including a panel movable with respect to a wall
9 of the cassette, the panel having a plurality of signal apertures of the panel arranged in a
10 predetermined pattern;

11 a switching unit being mounted on the main body, said switching unit switching in response
12 to the generated signal ~~codes~~ code when the cassette is mounted in the main body; and

13 a control unit outputting a size signal in response to said switching of said switching unit,
14 said size signal corresponding to a size of the media loaded into the cassette.

1 2.(Currently amended) The apparatus of claim 1, said signal generating unit further
2 comprising:

3 ~~a first panel being movably mounted in a wall of the cassette, said first panel having a first~~

4 ~~plurality of signal apertures arranged in a first pattern; and~~

5 a region of the wall of the cassette being adjacent to said ~~first~~ panel, said region having a
6 ~~second~~ plurality of signal apertures of the region ~~formed in the wall of the cassette, said second~~
7 ~~plurality of signal apertures being~~ arranged in a ~~second~~ pattern distinguishable from said ~~first~~
8 predetermined pattern, said ~~first and second pluralities of~~ signal apertures of the panel and the region
9 of the wall producing said ~~plurality of~~ signal ~~codes~~ code.

1 3.(Currently amended) The apparatus of claim 2, said ~~first~~ panel being connected to
2 said media aligning guide and moving in response to movement of said media aligning guide.

1 4.(Currently amended) The apparatus of claim 1 3, ~~further comprising:~~
2 said panel being connected to said media aligning guide and moving in response to
3 movement of said media aligning guide, and said signal code ~~a size pattern~~ being formed by said
4 ~~first plurality of~~ signal apertures of the panel ~~together with said second plurality of apertures in~~
5 response to said moving of said ~~first~~ panel, said ~~formed size pattern~~ signal code corresponding to the
6 size of the media loaded in the cassette.

1 5.(Currently amended) The apparatus of claim 3 ~~[[4]]~~,
2 said signal code being formed by said signal apertures of the panel together with said signal
3 apertures of the region in response to said panel moving in response to movement of said media
4 aligning guide, said signal code corresponding to the size of the media loaded in the cassette, said
5 ~~first~~ plurality of signal apertures of the panel including at least a first aperture and a second aperture,

6 said ~~second~~ plurality of signal apertures of the region including at least a first aperture and a second
7 aperture, said formed ~~size pattern~~ signal code comprising:

8 at least said first apertures of said ~~first and second~~ pluralities of signal apertures of the panel
9 and region being aligned with each other and being not blocked and forming a through-hole through
10 the wall of the cassette and through said ~~first~~ panel when the cassette is mounted in the main body;

11 at least said second aperture of said ~~first~~ plurality of signal apertures of the panel being
12 blocked by the wall of the cassette when the cassette is mounted in the main body; and

13 at least said second aperture of said ~~second~~ plurality of signal apertures of the region being
14 blocked by said ~~first~~ panel when the cassette is mounted in the main body.

1 6. (Currently amended) The apparatus of claim 5, said switching unit further
2 comprising:

3 a plurality of slide pins selectively moving forward and backward according to an
4 interference with said signal ~~codes~~ code generated by said signal generating unit when the cassette
5 is mounted in the main body; and

6 a sensing unit sensing forward and backward movements of each of said slide pins, at least
7 one of said slide pins penetrating the through-hole formed by said first apertures of said ~~first and~~
8 ~~second~~ pluralities of signal apertures of the panel and the region when the cassette is mounted in the
9 main body.

1 7. (Original) The apparatus of claim 1, the main body corresponding to a main body of an
2 image forming unit.

1 8.(Original) The apparatus of claim 1, the media corresponding to recordable media.

1 9.(Original) The apparatus of claim 1, said media aligning guide comprising:

2 a first guide aligning the media in a first direction; and

3 a second guide aligning the media in a second direction substantially perpendicular to said
4 first direction.

1 10.(Original) The apparatus of claim 1, said media aligning guide being mounted in
2 connection with at least one guide groove formed in bottom of the cassette, said media aligning
3 guide being moved in linear reciprocating movements along said at least one guide groove.

1 11.(Currently amended) The apparatus of claim 1, said switching unit being movably
2 mounted in the main body, said switching unit moving backward being pressed by the cassette when
3 the cassette is mounted in the main body, said switching unit moving forward being released from
4 the cassette when the cassette is removed from the main body.

1 12 -15. (Canceled)

1 16.(Currently amended) The apparatus of claim 1, said ~~plurality of signal~~ code ~~codes~~
2 having predetermined code combinations respectively corresponding to predetermined sizes of
3 media.

1 17.(Currently amended) The apparatus of claim 1, said switching unit further
2 comprising:

3 a plurality of slide pins selectively moving forward and backward according to an
4 interference with said signal code ~~codes~~ generated by said signal generating unit when the cassette
5 is mounted in the main body; and

6 a sensing unit sensing forward and backward movements of each of said slide pins.

1 18.(Original) The apparatus of claim 17, said sensing unit including photo sensors
2 correspondingly mounted at end portions of said slide pins and detecting whether the end portions
3 move forward or backward.

1 19.(Original) The apparatus of claim 17, said sensing unit including contact switches
2 correspondingly mounted at end portions of said slide pins and outputting a signal to said control
3 unit with selective turning-on and turning-off according to whether the end portions move forward
4 or backward.

1 20.(Original) The apparatus of claim 17, said sensing unit including photo sensors
2 correspondingly mounted adjacent to said slide pins and detecting whether said slide pins move
3 forward or backward.

1 21.(Original) The apparatus of claim 17, said sensing unit including contact switches

2 correspondingly mounted adjacent to said slide pins and outputting a signal to said control unit with
3 selective turning-on and turning-off according to whether said slide pins move forward or backward.

1 22.(Original) The apparatus of claim 1, said control unit being mounted on the main body.

1 23.(Original) The apparatus of claim 1, said signal generating unit being mounted on the
2 cassette.

1 24.(Original) The apparatus of claim 1, said size signal corresponding to an electrical signal.

1 25 - 37. (Canceled)

1 38.(Currently amended) An apparatus recognizing a size of media, said apparatus
2 comprising:

3 a first media aligning guide being mounted on a cassette and being ~~reciprocally~~ movable to
4 a plurality of different positions ~~along a first line in a first direction~~ to ~~closely~~ align the media loaded
5 in the cassette, the cassette being detachably mounted in a main body;

6 a second media aligning guide being mounted on the cassette and being ~~reciprocally~~ movable
7 to a plurality of different positions ~~along a second line in a second direction~~ to ~~closely~~ align the
8 media loaded in the cassette, ~~said first direction being substantially perpendicular to said second~~
9 ~~direction~~;

10 a signal generating unit being interlocked with said first and second media aligning guides,

11 said signal generating unit generating a ~~plurality of~~ signal code codes in response to a current
12 position of said first and second media aligning guides;

13 a switching unit being mounted on the main body, said switching unit switching in response
14 to the generated signal code codes when the cassette is mounted in the main body; and

15 a control unit outputting a size signal in response to said switching of said switching unit,
16 said size signal corresponding to a size of the media loaded into the cassette.

1 39.(Currently amended) The apparatus of claim 38, said signal generating unit
2 comprising:

3 a ~~first~~ panel being movably mounted with respect to ~~in~~ a wall of the cassette, said ~~first~~ panel
4 having a first plurality of signal apertures arranged in a first pattern; and

5 a region of the wall of the cassette being adjacent to said ~~first~~ panel, said region having a
6 second plurality of signal apertures ~~formed in the wall of the cassette~~, said second plurality of signal
7 apertures being arranged in a second pattern distinguishable from said first pattern, said first and
8 second pluralities of signal apertures producing said ~~plurality of~~ signal code codes.

1 40.(Currently amended) The apparatus of claim 39, said ~~first~~ panel being connected to
2 said first media aligning guide and moving in response to movement of said first media aligning
3 guide.

1 41. (Canceled)

1 42.(Currently amended) The apparatus of claim 40 [[41]], said first plurality of signal
2 apertures including at least a first aperture and a second aperture, said second plurality of signal
3 apertures including at least a first aperture and a second aperture, said signal code ~~formed size pattern~~
4 comprising:

5 at least said first apertures of said first and second pluralities of signal apertures being aligned
6 with each other and being not blocked and forming a through-hole through the wall of the cassette
7 and through said ~~first~~ panel when the cassette is mounted in the main body;

8 at least said second aperture of said first plurality of signal apertures being blocked by the
9 wall of the cassette when the cassette is mounted in the main body; and

10 at least said second aperture of said second plurality of signal apertures being blocked by said
11 ~~first~~ panel when the cassette is mounted in the main body.

1 43.(Currently amended) The apparatus of claim 42, said switching unit further
2 comprising:

3 a plurality of slide pins selectively moving forward and backward according to an
4 interference with said signal code ~~codes~~ generated by said signal generating unit when the cassette
5 is mounted in the main body; and

6 a sensing unit sensing forward and backward movements of each of said slide pins, at least
7 one of said slide pins penetrating the through-hole formed by said first apertures of said first and
8 second pluralities of signal apertures when the cassette is mounted in the main body.

1 44.(Currently amended) The apparatus of claim 38, said signal generating unit

comprising:

a ~~first~~ panel being movable with respect to movably mounted in a wall of the cassette, said ~~first~~ panel having a first plurality of signal apertures arranged in a first pattern;

a region of the wall of the cassette being adjacent to said ~~first~~ panel, said region having a second plurality of signal apertures ~~formed in the wall of the cassette, said second plurality of signal apertures being~~ arranged in a second pattern distinguishable from said first pattern, said first and second pluralities of signal apertures producing said ~~plurality of signal~~ code codes; and

a slide member being movably mounted along the region of the wall of the cassette,; and said apparatus further comprising:

a first interlocking unit mutually interlocking said first media aligning guide and said ~~first~~ panel, said first interlocking unit moving said ~~first~~ panel in response to a moving of said first media aligning guide; and

a second interlocking unit mutually interlocking said second media aligning guide and said slide member, said second interlocking unit moving said slide member in response to a moving of said second media aligning guide,;

said first plurality of apertures together with said second plurality of apertures forming a size pattern in response to said first and second interlocking units moving said ~~first~~ panel and said slide member, said formed size pattern corresponding to the size of the media loaded in the cassette.

45.(Original) The apparatus of claim 44, said formed size pattern being selected from among a predetermined plurality of different size patterns, said different size patterns corresponding to different sizes of media.

1 46.(Original) The apparatus of claim 44, said formed size pattern being selected from
2 among a plurality of size patterns, said plurality of size patterns corresponding to different sizes of
3 media.

1 47.(Original) The apparatus of claim 46, said first and second pluralities of apertures having
2 a predetermined unit height.

1 48.(Original) The apparatus of claim 47, said first plurality of signal apertures being
2 arranged adjacent to said second plurality of signal apertures to form said plurality of size patterns
3 on a horizontal reference line to have at least more than three units of said unit height from top to
4 bottom.

1 49.(Original) The apparatus of claim 48, said first plurality of signal apertures being
2 arranged to be combined in correspondence with said second plurality of signal apertures.

1 50.(Original) The apparatus of claim 48, said formed size pattern corresponding to selected
2 ones of said first plurality of apertures and selected ones of said second plurality of apertures being
3 closed and opened in response to movement of said first panel and of said slide member.

1 51 - 53. (Canceled)

1 54.(Currently amended) The apparatus of claim 44, said first interlocking unit
2 comprising:

3 an arm member having a first end and a second end, said arm member being rotatably
4 mounted on bottom of the cassette, said first end being connected with said first media aligning
5 guide, said second end being connected with said ~~first~~ panel.

1 55. (Canceled)

1 56.(Original) The apparatus of claim 44, said second interlocking unit comprising:
2 a cam protrusion being provided on bottom of said second media aligning guide; and
3 a rotating member being mounted on bottom of the cassette in a state elastically biased in one
4 direction to be rotated by an interference of said cam protrusion, one end of said rotating member
5 being connected to said slide member to constrain movement of said slide member.

1 57.(Original) The apparatus of claim 38, said first media aligning guide being mounted in
2 connection with a first guide groove formed in the cassette, said first media aligning guide being
3 moved in linear reciprocating movements along said first guide groove.

1 58.(Currently amended) The apparatus of claim 38 [[57]], said first media aligning
2 guide being reciprocally movable to said plurality of different positions along a first line in a first
3 direction, and said second media aligning guide being reciprocally movable to a plurality of different
4 positions along a second line in a second direction, said first direction being substantially

5 ~~perpendicular to said second direction mounted in connection with a second guide groove formed~~
6 ~~in the cassette, said second media aligning guide being moved in linear reciprocating movements~~
7 ~~along said second guide groove.~~

1 59. (Canceled)

1 60.(Original) The apparatus of claim 38, said second media aligning guide being mounted
2 in connection with a second guide groove formed in the cassette, said second media aligning guide
3 being moved in linear reciprocating movements along said second guide groove.

1 61.(Currently amended) The apparatus of claim 38, said switching unit further
2 comprising:

3 a plurality of slide pins selectively moving forward and backward according to an
4 interference with said signal ~~code~~ codes generated by said signal generating unit when the cassette
5 is mounted in the main body; and

6 a sensing unit sensing forward and backward movements of each of said slide pins.

1 62 - 65. (Canceled)

1 66.(Currently amended) The apparatus of claim 38, said switching unit being movably
2 mounted in the main body, said switching unit moving backward being pressed by the cassette when
3 the cassette is mounted in the main body, said switching unit moving forward being released from

4 the cassette when the cassette is removed from the main body.

1 67. (Canceled)

1 68.(Original) The apparatus of claim 38, the cassette being detachably mounted in the main
2 body in a first direction, the media being fed from the cassette seriatim in a second direction, said
3 first and second directions being perpendicular to each other.

1 69.(Currently amended) An apparatus recognizing a size of media, said apparatus
2 comprising:

3 a first media aligning guide being mounted on a cassette and being ~~reciprocally~~ movable to
4 a plurality of different positions ~~along a first line in a first direction to closely align media loaded in~~
5 the cassette, the cassette being detachably mounted in a main body;

6 a second media aligning guide being mounted on the cassette and being ~~reciprocally~~ movable
7 to a plurality of different positions ~~along a second line in a second direction to closely align the~~
8 ~~media loaded in the cassette, said first direction being substantially perpendicular to said second~~
9 ~~direction;~~

10 a signal generating unit being interlocked with said first and second media aligning guides,
11 said signal generating unit generating a ~~plurality of signal~~ code ~~codes~~ in response to a current
12 position of said first and second media aligning guides, said ~~plurality of signal~~ code ~~codes~~ having
13 code combinations respectively corresponding to sizes of media;

14 a switching unit switching in response to the generated signal code ~~codes~~ when the cassette

15 is mounted in the main body; and

16 a control unit outputting a size signal in response to said switching of said switching unit,
17 said size signal corresponding to a size of the media loaded into the cassette, ~~said first and second~~
18 ~~media aligning guides being moved in response to touching edges of the media when the media is~~
19 ~~loaded into the cassette, said first and second media aligning guides having a current position~~
20 ~~corresponding to the size of the media when the media is loaded into the cassette.~~

1 70.(Currently amended) The apparatus of claim 69, said signal generating unit
2 comprising:

3 a ~~first~~ panel being ~~linearly reciprocally~~ movable with respect to in a wall of the cassette, said
4 ~~first~~ panel having a first plurality of signal apertures arranged in a first pattern, said ~~first~~ panel being
5 interlocked with said first media aligning guide and moving in response to movement of said first
6 media aligning guide;

7 a region of the wall of the cassette having a second plurality of signal apertures ~~formed in the~~
8 ~~wall of the cassette, the region of the wall being adjacent to said first panel, said second plurality of~~
9 ~~signal apertures being~~ arranged in a second pattern distinguishable from said first pattern, said first
10 and second pluralities of signal apertures producing said ~~plurality of~~ signal code codes; and

11 a slide member being ~~linearly reciprocally~~ movable along the region of the wall of the
12 cassette, said slide member being interlocked with said second media aligning guide and moving in
13 response to movement of said second media aligning guide, and said apparatus further comprises;

14 a first interlocking unit mutually interlocking said first media aligning guide and said ~~first~~
15 panel, said first interlocking unit moving said ~~first~~ panel in response to a moving of said first media

16 aligning guide; and

17 a second interlocking unit mutually interlocking said second media aligning guide and said
18 slide member, said second interlocking unit moving said slide member in response to a moving of
19 said second media aligning guide, said first plurality of apertures together with said second plurality
20 of apertures forming a size pattern in response to said first and second interlocking units moving said
21 first panel and said slide member, said formed size pattern corresponding to the size of the media
22 loaded in the cassette.

1 71.(Original) The apparatus of claim 70, said slide member selectively opening and closing
2 at least one of said second plurality of signal apertures by linearly reciprocally moving along the
3 region of the wall of the cassette.

1 72.(Original) The apparatus of claim 70, said signal generating unit forming said size
2 pattern and forming at least one size code, said size code being formed by said slide member
3 selectively opening and closing at least one of said second plurality of signal apertures by linearly
4 reciprocally moving along the region of the wall of the cassette, said size pattern being
5 distinguishable from said size code, said size pattern and said size code together corresponding to
6 a size of the media loaded in the cassette.

1 73 - 81. (Canceled)

1 82. (New) The apparatus of claim 69, said second media aligning guide being movable

to said plurality of different positions to align the media loaded in the cassette.

83. (New) An image forming apparatus comprising the apparatus as claimed in claim 1.

84. (New) An image forming apparatus comprising the apparatus as claimed in claim 38.

85. (New) An image forming apparatus comprising the apparatus as claimed in claim 69.

86. (New) An apparatus recognizing a size of media, the apparatus comprising:
a media aligning guide provided to a cassette and movable to a plurality of positions to align media loaded in the cassette; and
a signal generating unit generating a signal code corresponding to a current position of the media aligning guide and a size of the media loaded into the cassette, wherein: the signal generating unit comprises a pattern output unit having a plurality of signal apertures arranged in a predetermined pattern,
the signal code is generated according to a current state of the signal apertures, and
the state of the signal apertures is changeable by a movement of the media aligning guide.

87. (New) The apparatus of claim 86, wherein the pattern output unit is movable by the movement of the media aligning guide; and the signal code is generated according to a current position of the signal apertures.

1 88. (New) The apparatus of claim 86, wherein:
2 the pattern output unit is a region of a wall of the cassette;
3 the signal generating unit further comprises:
4 an obstructing unit movable by the movement of the media aligning guide;
5 the obstructing unit obstructing one or more of the signal apertures according to the
6 movement of the media aligning guide; and
7 the signal code is generated according to a current position of the obstructing unit.

1 89. (New) The apparatus of claim 86, further comprising:
2 a switching unit switching in response to the generated code signal where the cassette is
3 mounted to a main body; and
4 a control unit outputting a size signal corresponding to the size of the media loaded into the
5 cassette in response to the switching of the switching unit.

1 90. (New) An image forming apparatus comprising the apparatus as claimed in claim 86.

1 91. (New) An apparatus recognizing a size of media, the apparatus comprising:
2 a first media aligning guide provided to a cassette and movable to a plurality of positions
3 corresponding to different media lengths;
4 a second media aligning guide provided to the cassette and movable to a plurality of positions
5 corresponding to different media widths; and
6 a signal generating unit associated with the first and second aligning guides to generate a

7- signal code corresponding to a current position of the first and second media aligning guides,
8 wherein:

9 the signal code corresponds to a size of media loaded into the cassette, and
10 at least one of the first and second media aligning guides is movable to the plurality of
11 positions to align the media loaded in the cassette.

1 92. (New) The apparatus of claim 91, wherein the signal generating unit comprises: a first
2 signal generating unit associated with the first media aligning guide to generate a first signal code
3 corresponding to the current position of the first media aligning guide; and
4 a second signal generating unit associated with the second media aligning guide to generate
5 a second signal code corresponding to the current position of the second media aligning guide, and
6 the signal code comprises the first and second signal codes.

1 93. (New) The apparatus of claim 92, wherein
2 the first signal generating unit comprises:
3 one or more signal apertures having a predetermined pattern; and
4 an obstructing unit, and
5 the first signal code is generated according to a result of a position of the one or more signal
6 apertures relative to a position of the obstructing unit, the result being changeable by a movement
7 of the first media aligning guide.

1 94. (New) The apparatus of claim 93, wherein the obstructing unit is movable by the

movement of the first media aligning guide.

95. (New) The apparatus of claim 93, wherein the one or more signal apertures are provided to move by the movement of the first media aligning guide.

96. (New) The apparatus of claim 95, wherein the obstructing unit is formed by a predetermined cut out of a wall of the cassette, and the one or more signal apertures are provided to a panel movable with respect to the predetermined cut out of the wall by the movement of the first media aligning guide.

97. (New) The apparatus of claim 93, wherein:
the second signal generating unit comprises:
one or more signal apertures having a predetermined pattern; and
an obstructing unit, and
the second signal code is generated according to a result of a position of the one or more signal apertures relative to a position of the obstructing unit, the result being changeable by a movement of the second media aligning guide.

98. (New) The apparatus of claim 97, further comprising:
a switching unit switching in response to the generated code signal where the cassette is mounted to a main body; and
a control unit outputting a size signal corresponding to the size of the media loaded into the

cassette in response to the switching of the switching unit.

99. (New) The apparatus of claim 98, wherein switching unit further comprising:

a plurality of slide pins selectively moving forward and backward according to an interference with said signal code generated by said signal generating unit when the cassette is mounted in the main body; and

a sensing unit sensing forward and backward movements of each of said slide pins.

100. (New) The apparatus of claim 93, wherein the obstructing unit obstructs the one or more signal apertures according to the movement of the first media aligning guide.

101. (New) The apparatus of claim 93, wherein the obstructing unit changes the predetermined pattern of the one or more signal apertures by obstructing the one or more signal apertures according to the movement of the first media aligning guide.

102. (New) The apparatus of claim 92, wherein:

the second signal generating unit comprises:

one or more signal apertures having a predetermined pattern; and

an obstructing unit, and

the second signal code is generated according to a result of position of the one or more signal apertures relative to a position of the obstructing unit, the result being changeable by a movement of the second media aligning guide.

1 103. (New) The apparatus of claim 92, wherein:

2 the first and/or second signal generating unit comprises a pattern output unit having one or
3 more signal apertures;

4 the pattern output unit or units being movable by a movement of the corresponding one or
5 ones of the first and second media aligning guides; and

6 the first and/or second signal code is generated according to a current position of the
7 corresponding one or ones of the one or more signal apertures of the first and/or second signal
8 generating unit.

1 104. (New) The apparatus of claim 92, wherein:

2 the first and/or second signal generating unit comprises one or more signal apertures having
3 a predetermined pattern, and an obstructing unit for changing the predetermined pattern of the one
4 or more signal apertures by obstructing the one or more signal apertures according to a movement
5 of the corresponding media aligning guide; and

6 the obstructing unit or units movable by the movement of the corresponding one or ones of
7 the first and second media aligning guide, and the first and/or second signal code is generated
8 according to a position the corresponding one or ones of the obstructing units.

1 105. (New) The apparatus of claim 104, further comprising:

2 a switching unit switching in response to the generated code signal where the cassette is
3 mounted to a main body; and

4. a control unit outputting a size signal corresponding to the size of the media loaded into the
5 cassette in response to the switching of the switching unit.

1 106. (New) The apparatus of claim 105, wherein switching unit further comprising:
2 a plurality of slide pins selectively moving forward and backward according to an
3 interference with said signal code generated by said signal generating unit when the cassette is
4 mounted in the main body; and
5 a sensing unit sensing forward and backward movements of each of said slide pins.

1 107. (New) The apparatus of claim 91, further comprising:
2 a switching unit switching in response to the generated code signal where the cassette is
3 mounted to a main body; and
4 a control unit outputting a size signal corresponding to the size of the media loaded into the
5 cassette in response to the switching of the switching unit.

1 108. (New) An image forming apparatus comprising the apparatus as claimed in claim 91.